PROTO
MEASUREMENT SERVICES

EXPERIENCE IN RESIDUAL STRESS

COMPLIANCE NATIONAL & INT’L STDS

KNOWLEDGE OF DIVERSE INDUSTRIES

QUALITY ISO 17025 ACCREDITED
SOLUTIONS

Use our ISO/IEC 17025:2005 accredited laboratories to ensure you get the most reliable and accurate x-ray diffraction results.

RESIDUAL STRESS MEASUREMENT
ASTM E915, ASTM E2860, ASTM E1426, SAE HS-784, RS vs. Depth, RS Mapping

RETAINED AUSTENITE ANALYSIS
ASTM E975, SAE SP-453, Rietveld Analysis, Carbide Evaluation

SINGLE CRYSTAL ORIENTATION
Determine the orientation of single crystal materials using Laue XRD

POWDER DIFFRACTION
Phase identification, Quantitative phase analysis, Nitride layer analysis

ISO/IEC 17025:2005 accredited
ITAR Compliant
PROTO’S x-ray diffraction (XRD) measurement services provide characterization solutions for a wide range of applications including shot peening, heat treatment, surface enhancement, grinding, machining, welding, corrosion and fatigue. Our state-of-the-art laboratories are equipped with specialized instrumentation to ensure reliable and accurate results.

**INSTRUMENTATION**

- 11 High Speed Laboratory LXRD Residual Stress & Retained Austenite Measurement Systems
- 9 Portable iXRD Residual Stress & Retained Austenite Measurement Systems
- 4 AXRD General Purpose Powder Diffractometers
- LAUE-HT Single Crystal Orientation System
- LXRD-SC Single Crystal Residual Stress System
- High-speed hole drilling RS system
- Wet chemistry laboratory for sample prep
- 8818-V3 Electropolishers
- Metrology lab with high accuracy profilometers
- Strain Gauging
WHY CHOOSE US?

With over 30 years specializing in XRD technology, PROTO is proud to be recognized as having world-class x-ray diffraction laboratories. When you choose PROTO, you are getting more than just measurements, you become a valued part of our network and gain access to our extensive residual stress and retained austenite measurement knowledge and experience.

COMPREHENSIVE SOLUTIONS

SPECIALIZED TECHNICIANS

ADVANCED TECHNOLOGY

ACCURATE RESULTS
THE WORK

AUTOMOTIVE - AEROSPACE - POWER GENERATION
MILITARY - MARINE - MEDICAL - PIPELINES

1. iXRD Modular Mapping system being used to quantify the residual stress around a cooling hole on an aerospace turbine component.

2. MG15 mini-goniometer measuring residual stress inside a 60 mm diameter automotive engine cylinder bore.

3. Residual stress map of a brake rotor surface using an LXRD laboratory residual stress mapping system.

4. On-site measurement of a power generation steam turbine blade retention slot using an iXRD MG40 on a FS4 field stand.

5. Characterizing stress corrosion cracking (SCC) susceptibility on an aircraft frame using an iXRD portable residual stress measurement system.
OUR OFFICES

With laboratories located across the globe, our team is ready to facilitate all your project needs. Our offices are equipped with both state-of-the-art instruments and knowledgeable technicians. You’ll find a team of highly skilled professionals at all of our locations who are ready and willing to address your specific testing requirements.

CONTACT US FOR A QUOTE TODAY! 1-800-965-8378

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